

# RASTER CHART DISPLAY SYSTEM FIELD TEST

IDENTIFICATION	INFORMATION
Name of Vessel	Stellan Wind
Type, Tons, Length	Inston tug
Company Name	Cook Inlet Tuy + Basse Co
Contact Name	Cook Mile 12 Marge Co
Address	
Telephone	
E-Mail	
RASTER CHART E	EQUIPMENT IN USE DURING TEST
Navigation Software	$\mathcal{I}$
Version	Window 95 40
Manufacturer	Winter 75 7.0
Computer	125hiba 225
Monitor Size	12"
Monitor Resolution	
Raster Data Brand	Compute NDI + CHANT Kit BBA
OTHER EQUIPME	NT IN USE DURING TEST
	whether the equipment is integrated with the raster chart navigation
software. Then indicate	ate the manufacturer and model.
ODG (IIA)	
GPS (Y/N)	
DGPS (VN)	FURUNG
Radar (YN)	
ARPA (YM) LORAN C (YM)	
Speed Log (Y/N)	
Compass (YN)	
Other (Y/N)	
- mior (1/14)	

OPERATOR (repeat	at on back if other operate	or's experience is comb	ined in test report.)
Operator's Name			
Operator's Rank		-	
RCDS Experience	Master 15 mon		•
Years Experience as			
<del></del>	lmsman	のナ	
	vigation/chart work	25	
	ficer of the watch	20	
	-	20	
	aptain/Master of a vessel	20	
■ pil	_		
■ oti	her (specify)		
TEST AREA			
evaluated:	utes or general geographi	c area where the RCDS	was being used and
_ S E	Alaska c	GulF C	ook Inlet
	look Tolet	Alaska	
Estimate as a percent amount of time the R	age of the total experience CDS was being used in the	e being reflected in this he following situations.	s test report, the
Open Water Passage	4/	Hann Tueff	_
Coastal Transit	- X/one	Heavy Traffic Medium Traffic	
Harbor & Approach	<u> </u>	Light or No Traffic	
Channels/Constricted	$\frac{-10}{\ln n}$	Light of 140 Haffic	
Docking			10076
Other (specify)	7	Day Navigation	/MD
	total 100%	Night Navigation	
			total 100%
<b>Excellent Visibility</b>	80		20010
Fair Visibility	20	Quiet Seas	100
Poor Visibility		Light Seas	
No Visibility		Moderate Seas	
	total 100%	Heavy Seas	
			total 100%
Approximate Total D		1	
Being Summarized in	This Test Report:	150 DA	15
Over How Long a Per		15 months	[
(example answer: Ap	pprox. 8 months over 1 years	ear with the rest being in	n-port periods.)

EVALUATION SCALE (use for all questions)

		DESCRIPTORS			
		& SCORE			
does not apply	much worse than paper chart	somewhat worse	comparable to paper chart	somewhat better	superior to paper chart
0	1	2	3	4	-
cannot comment	significant problem	minor problem	no problem	minor advantage	significant
0	1	2	3	4	advantage
did not observe	hard to use	moderately difficult use	adequate ease of use	moderately easy to use	easy to use
0	1	2	3	4	4
did not use 0	inadequate 1	marginal 2	acceptable 3	good 4	excellent

EVALUATION SCALE (use for all questions)

## 1. RCDS AS A VOYAGE PLANNING TOOL

If using an RCDS for voyage planning is about the same as using a paper chart, then score the item in the middle of the range at "3".

Ref	Scores	Questions
#	(1-5 or 0)	(compared to paper chart performance where appropriate)
		How would you evaluate doing the following navigation functions with a
		raster chart compared to doing the comparable functions on a paper chart?
1.1	4	- entering routes, the adequacy of the number that could be entered?
1.2	4	- entering waypoints and if an adequate number were allowed?
1.3	4	- adding waypoints to a route after entering or reloading it?
1.4	4	- deleting waypoints from a route?
1.5	3	- changing the position of a waypoint?
1.6		- changing the order of waypoints in a route?
1.7		- entering an adequate number of alternative routes?
1.8	4	- distinguishing alternate routes from the principal one?
1.9	4	- displaying routes over other charts?
1.10	0	- reloading previously planned routes for further planning?
1.11	_3	- dropping or inserting waypoints in real-time as you went?
1.12	3	- loading load tracks actually sailed for use in planning?
1.13	0	- specifying a cross-track error to trigger an automatic alarm?
1.14		- entering and annotating marks (operator-entered points)?
1.15	4	- editing and/or deleting marks?
1.16	1	- entering points, lines or areas which would activate an alarm such
		as guard zones, boundaries, range circles, etc.?
1.17		- entering notes that you wanted to enter?
1.18		- preparing a printed a voyage plan, a get home chartlet, GPS waypoints?

		Remember, you are to evaluate doing the following navigation
		functions using a raster chart compared to doing the comparable
		functions on a paper chart.
1.19	2	- calculate the distance of your planned trip?
1.20	5	- calculate bearing and distance to waypoints?
1.21	4	- estimate transit time(s)?
1.22		- recalculate time along track if you moved waypoints?
1.23	3	- readily display all the charts you needed?
1.24	5	- move around the chart (pan and zoom) while planning?
1.25		- display previously entered data over any chart you wanted?
1.26	·	<ul> <li>make the planning assessments and judgements that you would make with a paper chart?</li> </ul>
1.27	3	How was the planning workload compared to a paper chart?
	100	Score the following questions without comparing to a paper chart.
1.28	5	How was the legibility of the chart image during your planning session?
1.29	_	How was the impact on planning of seeing only a portion of a chart on the
	_3	screen at one time?
1.30	4	How was the impact of chart notes not always being visible?
1.31	0	How was the impact of some charts being on different map projections?
1.32	_	How would you compare planning using a raster chart system with
	3	planning using manual means and a paper chart?
1.33		Were there any fundamental limitations to planning using raster charts
		that were not just a limit of your software? What were they?
		- "
	0	
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## 2. RCDS FOR VOYAGE MONITORING

If using an RCDS for voyage monitoring is about the same as a paper chart, then score the item in the middle of the range at "3".

Ref #	<b>Scores</b> (1-5 or 0)	Questions (compared to paper chart performance where appropriate)
		How would you evaluate doing the following navigation functions using a raster chart compared to doing the comparable functions on a paper chart?
2.1	4	- displaying clearly all chart and voyage monitoring information?
2.2	3	- add or remove mariner-added information?
2.3	0	- display, hide or query mariner-added information?

functions using a raster chart compared to doing the comparable functions on a paper chart.  2.4			Remember, you are to evaluate doing the following navigation
functions on a paper chart.  - determine if a larger scale chart covers the area you are navigating?  - distinguish the ship's track and mariner's notes on the image?  - distinguish the ship's track and mariner's notes on the image?  - showing your position accurately on the chart in real-time?  - performing dead reckoning if your positioning system failed?  - displaying an alternate route in addition to the selected one?  - displaying an alternate route in addition to the selected one?  - distinguishing the alternative route from the selected one?  - distinguishing the selected route?  - find and display any chart easily during voyage monitoring?  - move around the chart (pan and zoom) to monitor your voyage?  - move around the chart (pan and zoom) to monitor your voyage?  - move around the chart (pan and zoom) to monitor your voyage?  - achieve an adequate overview of the voyage and route?  - transfer information you entered other charts?  - transfer information you entered other charts?  - view chart notes which were located off-screen?  - view chart notes which were located off-screen?  - estimating of arrival time compared to a paper chart?  - display the coordinates of any point on demand?  - display the coordinates of any point on demand?  - determine your lat./long. at any time?  - dynamically measure range and bearing to charted objects?  - monitor voyage parameters (speed over ground, course over ground, speed made good, time to go,)?  - switch from chart to chart manually in a convenient manner?  - switch from chart to chart manually in a convenient manner?  - switch from chart to chart manually in a convenient manner?  - monitor voyage parameters (speed over ground, course over ground, speed made good, time to go,)?  - switch from chart to chart manually in a convenient manner?  - switch from chart to chart manually in a convenient manner?  - The adequacy of the screen size?  - find and display and stee ship cached an appropriate distance from the edge of the screen?  - View an area of the cha			functions using a raster chart compared to doing the comparable
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- dynamically measure range and bearing to charted objects? - monitor voyage parameters (speed over ground, course over ground, speed made good, time to go,)?  - switch from chart to chart manually in a convenient manner?    Score the following questions without comparing to a paper chart.   The adequacy of the screen size?   Screen "clutter" compared to a paper chart during voyage monitoring?   Did the ship and route automatically appear whenever the display covered that area?   Did the chart automatically pan as the ship reached an appropriate distance from the edge of the screen?   View an area of the chart that did not contain the ship and have route monitoring/positioning continue in the background?   By a single action, show chart scale, datum, and depth and height units?   Avo	2.22		- determine your lat./long. at any time?
- monitor voyage parameters (speed over ground, course over ground, speed made good, time to go,)?  - switch from chart to chart manually in a convenient manner?    Score the following questions without comparing to a paper chart.	2.23	3-	
ground, speed made good, time to go,)?  - switch from chart to chart manually in a convenient manner?  Score the following questions without comparing to a paper chart.  The adequacy of the screen size?  Screen "clutter" compared to a paper chart during voyage monitoring?  The night colors for comfortable and legible viewing?  Did the ship and route automatically appear whenever the display covered that area?  Did the chart automatically pan as the ship reached an appropriate distance from the edge of the screen?  View an area of the chart that did not contain the ship and have route monitoring/positioning continue in the background?  By a single action, show chart scale, datum, and depth and height units?  Determine range and bearing to items that were off-screen?  Restore the ship-centered display with a single action?  Did waypoint arrival alarms work as you wished?  Did boundary crossing alarms work as you wished?  Were there frequent false alarms?	2.24		- monitor voyage parameters (speed over ground, course over
Score the following questions without comparing to a paper chart.  The adequacy of the screen size?  Screen "clutter" compared to a paper chart during voyage monitoring?  The night colors for comfortable and legible viewing?  Did the ship and route automatically appear whenever the display covered that area?  Did the chart automatically pan as the ship reached an appropriate distance from the edge of the screen?  View an area of the chart that did not contain the ship and have route monitoring/positioning continue in the background?  By a single action, show chart scale, datum, and depth and height units?  By a single action, show chart scale, datum, and depth and height units?  Restore the ship-centered display with a single action?  Did waypoint arrival alarms work as you wished?  Did boundary crossing alarms work as you wished?  Were there frequent false alarms?		5	ground, speed made good, time to go)?
Score the following questions without comparing to a paper chart.  2.26	2.25	5	
The adequacy of the screen size?  Screen "clutter" compared to a paper chart during voyage monitoring?  The night colors for comfortable and legible viewing?  Did the ship and route automatically appear whenever the display covered that area?  Did the chart automatically pan as the ship reached an appropriate distance from the edge of the screen?  View an area of the chart that did not contain the ship and have route monitoring/positioning continue in the background?  By a single action, show chart scale, datum, and depth and height units?  Determine range and bearing to items that were off-screen?  Restore the ship-centered display with a single action?  Did waypoint arrival alarms work as you wished?  Did boundary crossing alarms work as you wished?  Were there frequent false alarms?			
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2.29 Did the ship and route automatically appear whenever the display covered that area?  2.30 Did the chart automatically pan as the ship reached an appropriate distance from the edge of the screen?  2.31 View an area of the chart that did not contain the ship and have route monitoring/positioning continue in the background?  2.32 VO By a single action, show chart scale, datum, and depth and height units?  2.33 Determine range and bearing to items that were off-screen?  2.34 VO Restore the ship-centered display with a single action?  2.35 Did waypoint arrival alarms work as you wished?  2.36 Did boundary crossing alarms work as you wished?  2.37 Vove Were there frequent false alarms?	2.27		Screen "clutter" compared to a paper chart during voyage monitoring?
Did the ship and route automatically appear whenever the display covered that area?  Did the chart automatically pan as the ship reached an appropriate distance from the edge of the screen?  View an area of the chart that did not contain the ship and have route monitoring/positioning continue in the background?  By a single action, show chart scale, datum, and depth and height units?  Determine range and bearing to items that were off-screen?  Restore the ship-centered display with a single action?  Did waypoint arrival alarms work as you wished?  Did boundary crossing alarms work as you wished?  Were there frequent false alarms?	2.28	1	The night colors for comfortable and legible viewing?
2.30 Did the chart automatically pan as the ship reached an appropriate distance from the edge of the screen?  2.31 View an area of the chart that did not contain the ship and have route monitoring/positioning continue in the background?  2.32 NO By a single action, show chart scale, datum, and depth and height units?  2.33 NO Determine range and bearing to items that were off-screen?  2.34 NO Restore the ship-centered display with a single action?  2.35 O Did waypoint arrival alarms work as you wished?  2.36 O Did boundary crossing alarms work as you wished?  2.37 Nowe Were there frequent false alarms?	2.29		Did the ship and route automatically appear whenever the display
distance from the edge of the screen?  View an area of the chart that did not contain the ship and have route monitoring/positioning continue in the background?  By a single action, show chart scale, datum, and depth and height units?  Determine range and bearing to items that were off-screen?  Restore the ship-centered display with a single action?  Did waypoint arrival alarms work as you wished?  Did boundary crossing alarms work as you wished?  Worken Were there frequent false alarms?		5	covered that area?
2.31 View an area of the chart that did not contain the ship and have route monitoring/positioning continue in the background?  2.32 No By a single action, show chart scale, datum, and depth and height units?  2.33 No Determine range and bearing to items that were off-screen?  2.34 No Restore the ship-centered display with a single action?  2.35 O Did waypoint arrival alarms work as you wished?  2.36 O Did boundary crossing alarms work as you wished?  2.37 Nove Were there frequent false alarms?	2.30		Did the chart automatically pan as the ship reached an appropriate
monitoring/positioning continue in the background?  2.32 NO By a single action, show chart scale, datum, and depth and height units?  2.33 Determine range and bearing to items that were off-screen?  2.34 Restore the ship-centered display with a single action?  Did waypoint arrival alarms work as you wished?  2.36 Did boundary crossing alarms work as you wished?  2.37 None Were there frequent false alarms?		yes	distance from the edge of the screen?
monitoring/positioning continue in the background?  2.32 No By a single action, show chart scale, datum, and depth and height units?  2.33 Determine range and bearing to items that were off-screen?  2.34 No Restore the ship-centered display with a single action?  2.35 Did waypoint arrival alarms work as you wished?  2.36 Did boundary crossing alarms work as you wished?  2.37 Nove Were there frequent false alarms?	2.31		View an area of the chart that did not contain the ship and have route
2.33 Determine range and bearing to items that were off-screen?  2.34 Restore the ship-centered display with a single action?  Did waypoint arrival alarms work as you wished?  Did boundary crossing alarms work as you wished?  Did boundary crossing alarms?			monitoring/positioning continue in the background?
2.33 Determine range and bearing to items that were off-screen?  2.34 Restore the ship-centered display with a single action?  2.35 Did waypoint arrival alarms work as you wished?  2.36 Did boundary crossing alarms work as you wished?  2.37 None Were there frequent false alarms?		ND	By a single action, show chart scale, datum, and depth and height units?
2.35 O Did waypoint arrival alarms work as you wished?  2.36 O Did boundary crossing alarms work as you wished?  2.37 None Were there frequent false alarms?		NO	Determine range and bearing to items that were off-screen?
2.36 O Did boundary crossing alarms work as you wished?  2.37 Wove Were there frequent false alarms?		Ves	
2.37 Were there frequent false alarms?		0	
177770		0	
2.38   None   Did an alarm sound when you exceeded the cross track error limit?		None	
	2.38		Did an alarm sound when you exceeded the cross track error limit?

		Remember, you are scoring the following questions without
		comparison to a paper chart.
2.39		Did an alarm sound if the ship, within a mariner-specified time or
L.	None	distance, was to reach a critical point on the planned route?
2.40	VES	Did your system give an indication if positioning system input was lost?
2.41	/	If 2 positioning systems were used simultaneously, did the system
	NONE	identify discrepancies between the two?
2.42	Yes	Was route monitoring carried out in a simple and reliable manner?
2.43		In restricted waterways, how was the RCDS as a voyage monitoring tool
	Good	compared to the paper chart?
2.44	_	In congested waterway situations, how was the RCDS as a voyage
	Good	monitoring tool compared to the paper chart?
2.45	-	Could time-labels along the ships track be displayed easily at a range of
	0	intervals between 1 and 120 minutes?
2.46	Yes	Were you always able to navigate north up?
2.47		If course-up navigation was offered, how was it compared to using a
	()	paper chart?
2.48	~	How would you compare voyage monitoring using a raster chart system
	5	with voyage monitoring using a paper chart?
2.49	4	How was the voyage monitoring workload compared to a paper chart?
2.50		How would you rate using RCDS as the primary means of navigation
	4	compared to paper charts?
2.51		How would you evaluate the impact on the safety of navigation when
	4	using an RCDS as opposed to a paper chart?
2.52		Are there circumstances where you would not use RCDS for voyage monitoring? When?
		ALWAYS WHEN TRIVECUMG-
		NOT IN TUG ASSIST
2.53		Were there any fundamental limitations to voyage monitoring with
		raster charts that were not just a limit of your software? What were
		they?
		LOCAL KNOWGODE IN INCET OVERLIDES ANY DELACENT LIMITATIONS
		ANY APPARENT LIMITATIONS
		, -

#### 3. RCDS FOR VOYAGE RECORDING

Ref	Scores	Questions
#	(1-5 or 0)	(compared to paper chart performance where appropriate)
3.1	5	Could you record sufficient information to determine the ship's past track, time, position, heading and speed?
3.2		Were you able to add log entries manually? -NOT USED
3.3		Could you automatically record the official data used (RNC, edition, date and update history)?
3.4	5	Were you able to gather an adequate record of the voyage compared to using a paper chart?
3.5	15 MIN.	Could you record the entire course made good with time marks at intervals not exceeding 4 hours?
3.6	Yes	Were you able to save at least the previous 12 hours of voyage track?

#### 4. OTHER

Ref	Scores	Questions
#	(1-5 or 0)	(compared to paper chart performance where appropriate)
4.1		Were the accuracy of all calculations independent of the characteristics
		of the display and consistent with the RNC accuracy?
4.2	h	Were bearings and distances measured on the display as accurate as that
	5	afforded by the resolution of the display?
4.3	NOT	Could you make manual updates to the chart that were distinguishable
	USED	from the original chart without affecting the legibility of the chart?
4.4		Did the RCDS degrade the performance of any equipment that was
	NO	connected to it?
4.5	4	Once learned, how user-friendly would you judge the RCDS to be?
4.6	No	Did connection to other equipment degrade RCDS performance?
4.7	Yes	Did your system give adequate indication of system malfunction?
4.8	1	Were you able to execute in a convenient and timely manner all route
		planning, route monitoring and positioning performed on a paper chart?
4.9	57	How much would you say the RCDS reduced the navigational
	25%	workload compared to using a paper chart?
4.10		Summary Evaluation: Considering all of your experience and the
		questions asked above, how would you score the following statement?
	Sal	"RCDS with adequate back-up arrangements used together with an
18	rjen	appropriate folio of up-to-date paper charts may be accepted as
10	$\vdash$	complying with the chart carriage requirements of SOLAS."

Make any other comments you feel are relevant to the use of RCDS as the primary means of navigation on the back of this page.

the wind

4.10 This system could Reduce the Number of CHARLE to be CARRIED to some main overview CHART with Less Letail antil you get to the destination which should still Have a Large scale CHART on Bonal